

ABSTRACT

5 The invention is directed generally to the structure of prenyltransferases,  
particularly undecaprenyl pyrophosphate synthase, an enzyme important in bacterial  
cell wall synthesis. The invention relates to the crystal structure of undecaprenyl  
pyrophosphate synthase from *Streptococcus pneumoniae* and its interaction with  
cofactors and ligands. The invention also relates to the structure of ligand and  
cofactor binding sites of undecaprenyl pyrophosphate synthase.